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United States Department of Agriculture,

BUREAU OF SOILS.

ASSIGNMENT OF FIELD PARTIES.

SOIL SURVEY.

JAY A. BONSTEEL, *In Charge*; GEORGE N. COFFEY, *In Charge of Soil Classification and Correlation*; GEORGE W. BAUMANN, *In Charge of Maps and Field Records*.

New assignments.

The following assignments of field parties are made under the general letter of authorization (No. 36, July 1, 1905) issued to the Chief of the Bureau of Soils by the Secretary of Agriculture, and constitute a proper authorization to perform the travel and incur the expenses necessary to carry out such assignments:

J. A. Drake and H. L. Belden, upon the completion of the soil survey of the New Hanover, N. C., area, are directed to proceed to Escambia County, Fla., to aid in the soil survey of that county.

B. E. Brown is authorized and directed to proceed from Ithaca, N. Y., to headquarters in Washington on or about January 19, for the purpose of receiving necessary instructions and securing an equipment, after which he will proceed, accompanied by F. D. Stevens, from Washington, D. C., to Columbia, Mo., where temporary headquarters will be established for the purpose of carrying on investigations in the manurial requirements of certain Missouri soils in cooperation with the Missouri Experiment Station, H. J. Waters, Director. Traveling and subsistence expenses en route and for one day after reaching Columbia, Mo., will be allowed for both Mr. Brown and Mr. Stevens.

F. R. Reid is directed to proceed from Washington, D. C., to Ithaca, N. Y., on or about January 15, to relieve Mr. Brown, in charge of soil management investigations at that point. His traveling and subsistence expenses en route and for one day after reaching Ithaca will be allowed.

The necessary traveling and other expenses incurred in consequence of the above assignments will be reimbursed upon the presentation of accounts, properly executed and supported by correct vouchers, in accordance with the Fiscal Regulations of the Department.

Status of field work.

J. A. Drake reports from New Hanover County, N. C., that he is encountering the Norfolk sand, Norfolk fine sand, Norfolk fine sandy loam, Sandhill, Portsmouth sand, Galveston fine sand, and Galveston clay.

M. E. Carr reports the Norfolk fine sand from the Waycross, Ga., area.

A. M. Griffen reports the Norfolk sand and Portsmouth sand from Escambia County, Fla.

T. A. Caine reports that a large part of Montgomery County, Miss., is occupied by the Memphis silt loam. This type is not so badly eroded as in the Cane-hill section.

F. Bennett reports a new set of conditions from Pontotoc County, Miss., with the possibility that the Susquehanna series occurs in the county.

T. D. Rice reports from Tishomingo, Ind. T., area rough stony land and a fine sandy loam which is either Orangeburg or Miller; also a new series derived from the granite of the region. The new types have been given the provisional names of Tishomingo gravelly loam, Tishomingo sandy loam, and Tishomingo loam.

C. W. Ely reports from Rusk County, Tex., the Susquehanna clay, Norfolk fine sand, Norfolk fine sandy loam, Orangeburg sandy loam, Orangeburg clay, and another type which he is calling provisionally the Henderson silt loam.

A. W. Mangum reports from the San Marcos, Tex., area the Houston gravelly clay, Houston black clay, Colton stony clay, and the Crawford stony clay.

The work in Caddo Parish, La., Prairie County, Ark., and Oklahoma County, Okla., has not been in progress long enough for reports of the types encountered to be received at the Bureau.

In several of the areas continued rains and, in some instances, heavy snows during the last ten days have considerably delayed the progress of the work.

Approximate areas to be surveyed in the winter season of 1905-6.

State.	Area.	Square miles.	Per cent completed, Jan. 6.	Party.
Alabama -----	Lee County -----	3 680	0	Hearn-Wilder.
Arkansas -----	Prairie County -----	1 658	10	Carter-Meeker.
Florida -----	Escambia County -----	2 680	16	Griffen-Kolbe.
Georgia -----	Waycross area -----	2 500	16	Carr, M.E.-Tharp.
Indian Territory	Tishomingo area -----	3 440	27	Rice-Ayrs.
Louisiana -----	Caddo Parish -----	4 825	6	Burgess-Hurst.
Mississippi -----	Montgomery County -----	2 400	12	Caine-Schroeder.
Do -----	Pontotoc County -----	2 530	30	Bennett, F.-Carr, E.P.
North Carolina	New Hanover County -----	2 199	95	Drake-Belden.
Oklahoma -----	Oklahoma County -----	3 720	14	McLendon-Jones.
Texas -----	San Marcos area -----	3 500	23	Mangum-Lyman.
Do -----	Rusk County -----	2 915	9	Ely-Kocher.

¹ Print of county map will be furnished.

² Plane table survey.

³ Topographic sheet.

⁴ Plane table to be used if reliable map can not be obtained.

Miscellaneous.

H. J. Wilder was authorized to stop off at Washington, en route to the Lee County area, Alabama, on January 2, 3, and 4, to look over the maps and discuss the correlation of soils of the Montgomery and Chester County areas, Pennsylvania, which he surveyed last summer.

E. P. Carr joined Frank Bennett at Pontotoc, Miss., the 2d of January.

Classification and correlation.

A new series, associated with the Dekalb series, has been established in Blount County, Ala., and Upshur County, W. Va., to be known as the Upshur series. The Upshur loam and the Upshur sandy loam are reported from Blount County, and the Upshur clay from Upshur County. This series is derived from the red shales of Paleozoic age found through the Allegheny Mountains and the Cumberland Plateau.

TOBACCO INVESTIGATIONS.

GEORGE T. MCNESS, *In Charge.*

The assignment of tobacco investigation parties continues the same as last month, viz, W. M. Hinson, H. Weinberg, and Otto Olson at Palestine, Tex., L. W. Ayer and R. S. Epley at Marion, Ala., and G. B. Massey at Germantown, Ohio, engaged in growing, curing, and fermenting Cuban-seed filler tobacco; E. H. Mathewson, W. W. Green, and Harry Rich at Appomattox, Va., engaged

in growing and curing heavy export tobacco ; and J. B. Stewart at Tariffville, Conn., engaged in growing, curing, and fermenting shade wrapper tobacco.

The Texas, Alabama, Ohio, and Connecticut parties continue their plant-breeding experiments in cooperation with the Bureau of Plant Industry.

Mr. McNess made a trip to Connecticut early in January, to inspect the packing of the 1905 crop.

Mr. George Harris was appointed a tobacco expert in the Bureau, reporting for duty January 1, and assigned to Connecticut to assist Mr. Stewart.

Favorable reports continue to come in from the trade concerning the Texas and Alabama tobaccos.

DIVISION OF SOIL MANAGEMENT.

F. D. GARDNER, *In Charge.*

F. E. Bonsteel is assigned to headquarters in charge of office details and reports.

J. W. Nelson, L. C. Holmes, W. J. Geib, G. B. Maynadier, F. D. Stevens, A. T. Sweet, F. R. Reid, E. L. Zehring, and Henry Winckelmann are in Washington, D. C., investigating manurial requirements of soils by the wire-basket method, Mr. Winckelmann being assigned to special work on the Arlington farm.

J. C. Britton and J. J. Skinner are at Raleigh, N. C., investigating the manurial requirements of certain soils in cooperation with the North Carolina Experiment Station.

B. E. Brown and O. L. Eckman are at Ithaca, N. Y., cooperating with the Cornell Experiment Station in investigating the manurial requirements of certain New York soils.

A. H. Snyder and C. L. Cook are at Ames, Iowa, cooperating with the Iowa Experiment Station on the manurial requirements of certain Iowa soils.

A new greenhouse has been constructed for the use of the Division of Soil Management, located in the Department grounds. It is 20 by 50 feet, 30 feet being under glass, and 20 feet finished as a laboratory. The laboratory part is to be used in the preparation and treatment of soils, the filling of baskets, and weighing. About 1,000 baskets are being used in the greenhouse at present, the total capacity being 2,000 baskets.

In the latter part of October, assistants in charge of Soil Survey parties were instructed by letter to collect 100-pound composite samples from each of the important soil types encountered in their respective areas. These letters of instruction should be carefully consulted and the directions given therein followed exactly, so far as they concern the methods of collecting the samples and the labeling and shipping, and these samples should be sent in just as soon as a sufficient acquaintance with the soil types is acquired to enable the field men to act intelligently. While it is desired that the samples should represent the average of the type in texture and other qualities, it is especially desired that they should be secured from a field in which the soil is below the average in productiveness, and should not represent the average of productiveness as required by the letter of instructions. It is also desired that, if practicable, these samples should be taken from the farms of men who may be sufficiently interested in the results of the fertility investigations to follow out any suggestions that may be made, and with whom the Bureau may correspond in regard to practical demonstrations of the manurial requirements of the soil recommended by the Bureau. The addresses of these men must invariably be forwarded to the Bureau in such a manner as to identify the samples with the addresses furnished.

DIVISION OF SOIL FERTILITY.

C. A. Jensen, A. T. Strahorn, and C. J. Mann are at headquarters, engaged in laboratory work on general problems of soil fertility. F. R. Pember is at Ames, Iowa, and J. F. Breazeale at Ithaca, N. Y., investigating the cause of low yields of certain soils of those localities.

Dr. Burton E. Livingston resigned from the Bureau January 1 to accept a position in the Desert Laboratory of the Carnegie Institution at Tucson, Ariz.

Prof. Samuel Fraser, Assistant Agronomist at Cornell University, has been appointed a soil expert in the Bureau, to fill the place made vacant by Dr. Livingston's resignation.

Supplementary to Bulletin No. 30, on "The Mineral Constituents of the Soil Solution," this Division has now in preparation a bulletin on the effect of the organic substances in the soil, in which will be described investigations on the toxic organic substances in distilled water, in soil extract, and in the excretions from plants, as well as the effect on the plants of various types of organic matter found in manures.

ALKALI LAND RECLAMATION.

CLARENCE W. DORSEY, *In Charge.*

Mr. Dorsey is at headquarters for the winter months.

W. W. Mackie is in charge of the reclamation tract at Fresno, Cal., J. F. Warner is in charge of the reclamation tract at Tempe, Ariz., and Rudolph Ross is in charge of the reclamation tract at Salt Lake City, Utah.

A new drainage system, much deeper than the original, was installed on the Fresno tract during the month of November.

J. F. Warner reports that the barley and alfalfa sowed on the greater part of the Tempe tract gives promise of a fine stand.

ADMINISTRATION.

Authorization.

Since the issuance of the assignment sheet of December 15, 1905, arrangements have been made whereby the printed assignments in this sheet will serve for authorizations to travel and incur necessary expenses not only for the Soil Survey men but also for employees in the laboratories, Soil Management, Alkali, Tobacco, and Fertility divisions. The instructions given under the head of "Authorization" in the assignment sheet of December 15, 1905, are otherwise unchanged. Particular attention is called to the requirement that the printed assignments must be in the hands of employees *in advance* of any travel being performed or expenses incurred.

Expense accounts.

When accounts are sent in for travel performed and expenses incurred under a special numbered letter of authorization, the letter of authorization must accompany the expense account, as otherwise the account can not be passed.

Notes.

Lyman J. Briggs, formerly in charge of the Laboratory of Soil Physics, was transferred to the position of physicist in the Division of Vegetable Physiology and Pathology, Bureau of Plant Industry, on January 1, 1906. The Laboratory of Soil Physics has been temporarily placed in charge of Dr. Cameron.

J. W. Kellogg, who has been assisting in the cooperative investigations at the Rhode Island Experiment Station, has resigned to take effect January 15, 1906.

C. C. Scott, for several years Dr. Cameron's stenographer, has resigned to accept a position at Parkersburg, W. Va., under the War Department.

The following bulletins have been issued recently :

Bulletin No. 28, "Studies on the Properties of an Unproductive Soil," by Burton Edward Livingston, J. C. Britton, and F. R. Reid, contains a detailed account of experiments with a soil found at Tacoma Park, Md., designated as Susquehanna clay loam.

Bulletin No. 29, "Tobacco Investigations in Ohio," by George T. McNess and George B. Massey, deals with the experiments in growing a fine quality of filler tobacco and fermenting and curing tobacco by improved methods to prevent loss from mold and pole rot.

Bulletin No. 30, "The Mineral Constituents of the Soil Solution," by Frank K. Cameron and James M. Bell, treats of the chemical problems involved in a study of the soil solution, dealing at some length with the problem of the solubility of the mineral constituents of soils.

Bulletin No. 31, "Colorimetric, Turbidity, and Titration Methods used in Soil Investigations," by Oswald Schreiner and G. H. Failyer, is now in the hands of the printer and will be issued at an early date. This is a technical bulletin giving detailed descriptions of the apparatus used in colorimetric methods and exact directions for determining the salts commonly found in solution in the soil moisture.

MILTON WHITNEY,
Chief of Bureau.

WASHINGTON, D. C., *January 13, 1906.*



